

WO 01/18047

PCT/AU00/01083

29

Claims:

1. An isolated polypeptide, the polypeptide comprising:-
 - (i) an amino acid sequence as set out in SEQ ID NO:1, or
 - 5 (ii) an amino acid sequence having at least 50% identity to the amino acid sequence set out in SEQ ID NO:1, or
 - (iii) a functional fragment of (i) or (ii).
- 10 2. An isolated polypeptide or peptide as claimed in claim 1, wherein the polypeptide or peptide has a sequence of at least 70%, more preferably at least 80% and most preferably at least 90% identity with the sequence shown in SEQ ID NO:1.
- 15 3. An isolated polypeptide, the polypeptide comprising:-
 - (i) an amino acid sequence as set out in SEQ ID NO:2, or
 - (ii) an amino acid sequence having at least 50% identity to the amino acid sequence set out in SEQ ID NO:2, or
 - (iii) a functional fragment of (i) or (ii).
- 20 4. An isolated polypeptide or peptide as claimed in claim 3, wherein the polypeptide or peptide has a sequence of at least 70%, more preferably at least 80% and most preferably at least 90% identity with the sequence shown in SEQ ID NO:2.
- 25 5. An isolated ligand, the ligand being interactive with the polypeptide or peptide of any one of claims 1 to 4.
6. An isolated ligand as claimed in claim 5, wherein the ligand is an antibody or the binding portion thereof.
- 30 7. An isolated nucleic acid molecule, the nucleic acid molecule encoding a polypeptide as claimed in any one of claims 1 to 4.

8. An isolated nucleic acid molecule, the nucleic acid molecule comprising:-

- (i) a sequence as set out in SEQ ID NO:3, or
- (ii) a sequence having at least 60% identity to the sequence set out in SEQ ID NO:3, or
- (iii) a sequence which hybridises to the sequence set out in SEQ ID NO:3 under stringent conditions, or
- (iv) a sequence encoding a functional analogue of a polypeptide as set out in SEQ ID NO:1.

9. An isolated nucleic acid molecule as claimed in claim 8, wherein the nucleic acid molecule comprises a sequence of at least 70%, more preferably at least 80% and most preferably at least 90% identity with the sequence shown in SEQ ID NO:3.

10. An isolated nucleic acid molecule, the nucleic acid molecule comprising:-

- (i) a sequence as set out in SEQ ID NO:4, or
- (ii) a sequence having at least 60% identity to the sequence set out in SEQ ID NO:4, or
- (iii) a sequence which hybridises to the sequence set out in SEQ ID NO:4 under stringent conditions, or
- (iv) a sequence encoding a functional analogue of a polypeptide as set out in SEQ ID NO:2.

11. An isolated nucleic acid molecule as claimed in claim 10, wherein the nucleic acid molecule comprises a sequence of at least 70%, more preferably at least 80% and most preferably at least 90% identity with the sequence shown in SEQ ID NO:4.

12. An isolated nucleic acid molecule, the nucleic acid molecule encoding the binding region of a ligand as claimed in claim 5 or claim 6.

13. A composition for use in raising or lowering an immune response in a subject, the composition comprising a ligand as claimed in claim 5 or claim 6 and an antigen and optionally a carrier and/or adjuvant.

WO 01/18047

PCT/AU00/01083

31

14. A composition as claimed in claim 13, wherein the antigen is associated with the ligand.
- 5 15. A composition as claimed in claim 13, wherein the antigen is conjugated to the ligand.
- 10 16. A composition for use in raising or lowering an immune response in a subject, the composition comprising a nucleic acid molecule and a carrier, the nucleic acid molecule comprising a first sequence encoding a ligand as claimed in claim 5 or claim 6 and a second sequence encoding an antigen.
- 15 17. A method of screening a putative compound for immunological regulatory activity, the method comprising reacting the compound with a polypeptide or peptide as claimed in any one of claims 1 to 4 and measuring interaction between the compound and the polypeptide or peptide.
- 20 18. A method of isolating an antigen presenting cell from a biological sample, the method comprising contacting the biological sample with a ligand as claimed in claim 5 or claim 6 such that a complex is formed between the ligand and the antigen presenting cell.
- 25 19. A method as claimed in claim 18 wherein the ligand is immobilised on a solid support.
- 20 20. A method of immunising a subject, the method comprising
 - (i) isolating antigen presenting cells from a fluid sample obtained from the subject, wherein the isolation involves contacting the fluid sample with a ligand as claimed in claim 5 or claim 6;
 - 30 (ii) exposing the cells isolated from step (i) to an antigen; and
 - (iii) reintroducing the cells from step (ii) into the subject.
21. A method as claimed in claim 20, in which the method comprises the further step of growing the antigen presenting cells *in vitro* after step (i).

35

- 22 A method of immunising a subject, the method comprising:
(i) isolating precursor cells from a fluid sample obtained from the subject, wherein the isolation involves contacting the fluid sample with a ligand as claimed in claim 5 or claim 6
5 (ii) growing the cells isolated from step (i) *in vitro* such that they mature and differentiate to become antigen presenting cells
(iii) exposing the cells obtained in step (ii) to an antigen
(iv) reintroducing the cells from step (iii) into the subject
- 10 23. A method of modulating an immune response in a subject, the method comprising administering to the subject a ligand as claimed in claim 5 or claim 6 such that the ligand binds to and inhibits the function of an antigen presenting cell.
- 15 24. A method as claimed in claim 23 wherein the antigen presenting cell is a myeloid dendritic cell.
25. A method as claimed in claim 23 or claim 24 in which the method further comprises the step of administering an antigen to the subject.
- 20 26. A method as claimed in claim 25 in which the antigen is administered after administration of the ligand.